Listing of Claims:

The following listing of claims replaces all prior versions, and listings, of claims in the application:

Claim 1 (original): A method of producing particles comprising the steps of:
providing a supercritical fluid;
providing a first solution, the first solution comprising a first solute dissolved or dispersed in a first solvent that is at least partially soluble in the supercritical fluid;
flowing the supercritical fluid through a chamber having a rotating rotor disposed therein;
dispensing the first solution into a mixing zone within the chamber while the supercritical fluid is flowing through the chamber, the mixing zone being defined as a space between an inner wall of the chamber and an adjacent surface of the rotating rotor; and
collecting precipitated particles of the first solute from a mixture comprising the supercritical fluid and the first solvent.

Claim 2 (original): The method of producing particles according to claim 1 wherein the rotating rotor intimately mixes the first solution and the supercritical fluid together via shear mixing, turbulent mixing and/or centrifugal mixing.

Claim 3 (original): The method of producing particles according to claim 1 wherein the first solution is dispensed into the mixing zone through one or a plurality of ports provided in the inner wall of the chamber.

Claim 4 (original): The method of producing particles according to claim 1 wherein the rotating rotor is a smooth drum, a grooved drum, a propeller rotor or a turbine rotor.

Claim 5 (original): The method of producing particles according to claim 1 wherein the rotor rotates within the chamber at a speed of from about 100 to about 20,000 RPM when the solution is being dispensed into the mixing zone.

Claim 6 (original): The method of producing particles according to claim 1 wherein the inner wall of the chamber is spaced apart from the surface of the rotating rotor a distance of from about 0.1 mm to about 2.5 mm.

Claim 7 (original): The method of producing particles according to claim 1 further comprising the steps of:

providing a second solution, the second solution comprising a second solute dissolved or dispersed in a second solvent that is at least partially soluble in the supercritical fluid; and

dispensing the second solution into the mixing zone at the same time the first solution is being dispensed into the mixing zone.

Claim 8 (original): The method of producing particles according to claim 7 wherein the first solution is dispensed into the mixing chamber through a first solution port and the second solution is dispensed into the mixing chamber through a second solution port.

Claim 9 (original): The method or producing particles according to claim 8 wherein the first solution port and the second solution port are coaxial.

Claim 10 (original): The method of producing particles according to claim 8 wherein the first solution port and the second solution port are formed in the inner wall of the chamber at different locations within the mixing zone.

Claim 11 (original): The method according to claim 7 wherein the first solvent and the second solvent are the same.

Claim 12 (original): The method according to claim 1 wherein the first solute is selected from the group consisting of biologically active materials, medicinal agents, sugars, pigments, toxins, insecticides, viral materials, diagnostic aids, agricultural chemicals, nutritional materials, proteins, alkyloids, alkaloids, peptides, animal and/or plant extracts, dyes, explosives, paints, polymer precursors, cosmetics, antigens, enzymes, catalysts, nucleic acids, and combinations thereof.

Claim 13 (original): The method according to claim 1 wherein the supercritical fluid is carbon dioxide.

Claim 14 (original): The method according to claim 1 wherein the first solution comprises an emulsion.

Claim 15 (original): The method according to claim 1 wherein the first solution comprises a suspension of the first solute in the form of solid phase particles dispersed in the first solvent.

Claim 16 (currently amended): The method according to claim 15 wherein a polymer, lipid and/or excipient is dissolved in the ~~first~~ second solvent, and the precipitated particles collected in the collecting step ~~comprise~~ have a core comprising the first solute and a shell comprising the polymer, lipid and/or excipient.

Claim 17 (original): The method according to claim 1 wherein the particles collected in the collecting step are substantially uniform and have an average diameter of less than about 5 μm.

Claim 18 (original): The method according to claim 1 further comprising the step of: adjusting the rotational speed of the rotor, the size of the space between the inner surface of the chamber and the adjacent surface of the rotor, and/or the flow rate of the supercritical fluid and/or first solution into the chamber to obtain precipitated solute particles having a desired average particle size.

Claim 19 (original): Particles formed according to the method of claim 1.

Claim 20 (canceled)

Claim 21 (new): A method of producing particles comprising the steps of:
providing a supercritical fluid;

providing a first solution, the first solution comprising a first solute dissolved or dispersed in a first solvent that is at least partially soluble in the supercritical fluid;

providing a second solution, the second solution comprising a second solute dissolved or dispersed in a second solvent that is at least partially soluble in the supercritical fluid;

flowing the supercritical fluid through a chamber having a rotating rotor disposed therein;

dispensing the first solution through a first solution port into a first portion of a mixing zone within the chamber while the supercritical fluid is flowing through the chamber, the mixing zone being defined as a space between an inner wall of the chamber and an adjacent surface of the rotating rotor;

dispensing the second solution through a second solution port into a second portion of the mixing zone at the same time the first solution is being dispensed into the mixing zone;

precipitating particles into a mixture comprising the supercritical fluid, the first solvent and the second solvent, the precipitated particles having a core structure comprising the first solute and a shell structure comprising the second solute; and

collecting the precipitated particles from the mixture.

Claim 22 (new): The method of producing particles according to claim 21 wherein the rotating rotor intimately mixes the first solution and the supercritical fluid together via shear mixing, turbulent mixing and/or centrifugal mixing.

Claim 23 (new): The method of producing particles according to claim 21 wherein the first solution is dispensed into the mixing zone through a plurality of first solution ports into the chamber.

Claim 24 (new): The method of producing particles according to claim 21 wherein the rotating rotor is a smooth drum, a grooved drum, a propeller rotor or a turbine rotor.

Claim 25 (new): The method of producing particles according to claim 21 wherein the

rotor rotates within the chamber at a speed of from about 100 to about 20,000 RPM when the first solution and the second solution are being dispensed into the mixing zone.

Claim 26 (new): The method of producing particles according to claim 21 wherein the inner wall of the chamber is spaced apart from the surface of the rotating rotor a distance of from about 0.1 mm to about 2.5 mm.

Claims 27 (new): The method or producing particles according to claim 21 wherein the first solution port and the second solution port are coaxial.

Claim 28 (new): The method of producing particles according to claim 21 wherein the first solution port and the second solution port are formed in the inner wall of the chamber at different locations within the mixing zone.

Claim 29 (new): The method according to claim 21 wherein the first solvent and the second solvent are the same.

Claim 30 (new): The method according to claim 21 wherein the first solute is selected from the group consisting of biologically active materials, medicinal agents, sugars, pigments, toxins, insecticides, viral materials, diagnostic aids, agricultural chemicals, nutritional materials, proteins, alkyloids, alkaloids, peptides, animal and/or plant extracts, dyes, explosives, paints, polymer precursors, cosmetics, antigens, enzymes, catalysts, nucleic acids, and combinations thereof.

Claim 31 (new): The method according to claim 21 wherein the supercritical fluid is carbon dioxide.

Claim 32 (new): The method according to claim 21 wherein the first solution comprises an emulsion.

Claim 33 (new): The method according to claim 21 wherein the first solution comprises a suspension of the first solute in the form of solid phase particles dispersed in the first solvent.

Claim 34 (new): The method according to claim 21 wherein a polymer, lipid and/or excipient is dissolved in the second solvent, and wherein the precipitated particles collected in the collecting step comprise have a core comprising the first solute and a shell comprising the polymer, lipid and/or excipient.

Claim 35 (new): The method according to claim 21 wherein the particles collected in the collecting step are substantially uniform and have an average diameter of less than about 5 μm.

Claim 36 (new): The method according to claim 21 further comprising the step of:

adjusting the rotational speed of the rotor, the size of the space between the inner surface of the chamber and the adjacent surface of the rotor, and/or the flow rate of the supercritical fluid, the first solution and/or the second solution into the chamber to obtain precipitated particles having a desired average particle size.

Claim 37 (new): Particles formed according to the method of claim 21.